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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/705,765

11/10/2003

Francesco Radice

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38106

7590

02/17/2005

SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVENUE, SUITE 6300
SEATTLE, WA 98104-7092

EXAMINER

GLENN, KIMBERLY E

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/705,765	Applicant(s) RADICE ET AL.	
	Examiner Kimberly E. Glenn	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,6,8,9,11-14,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-5,7,10,15 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/13/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

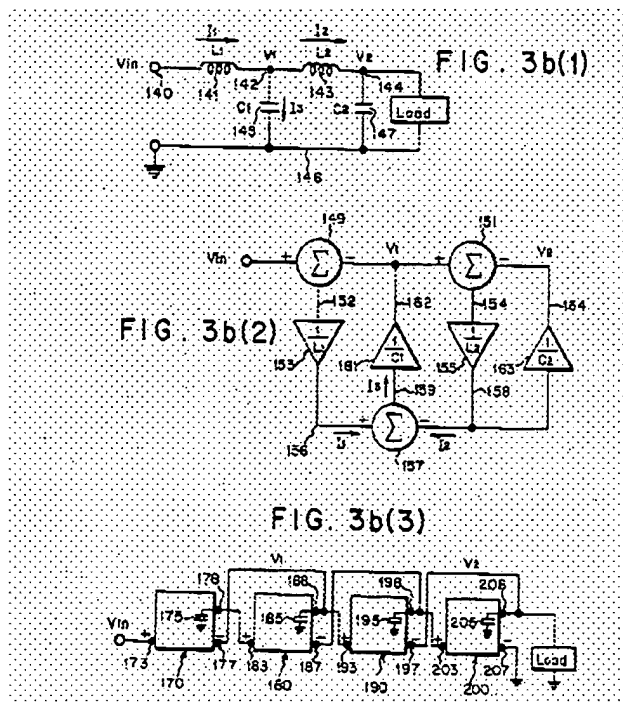
Claims 1, 6, 8, 9, 11-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McEwan et al et al US patent 5,804,921 in view of Robinson US Patent 4,839,542.

The primary reference, McEwan et al disclose a nonlinear transmission line comprising eight inductors 28 -24 and eight capacitors 44-58. The inductors and capacitors are connected between the input terminal 66 and ground and the output terminal 70 and ground. (Figure 1)

Thus, McEwan et al is shown to teach all the limitation of the claims with exception of the inductor and capacitor being formed by cascade first and second transconductance integrator, a feedback circuit coupled to the output in order to provide a reference signal for the feedback, the transconductance having a differential input, the inductor circuit simulation including bipolar or MOS transistors and the plurality of inductors and capacitors comprising at least twenty inductive and capacitive components.

Robinson discloses a plurality of inductive and capacitive components connected in cascade between a pair of inputs terminal and a pair of output terminals. A first and second transconductance integrator (120 and 130) connected in cascade form the inductive and capacitive components. The transconductance integrator has differential inputs 173 and 177. Robinson states that the MOS transistors could be replaced with junction-gate field effect transistors (JFET's), bipolar junction transistors (BJT's). (Column 17 lines 9-11)

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Robinson disclosed in figure 3b(1) a filter comprises inductors 141 and 143 and capacitors 145 and 147. The input signal V_{in} to the filter is applied at terminal 140. Signals V_{in} is taken with respect to ground terminal 146. Inductors 141 and 143 are modeled an inductor integrators 153 and 155. Capacitor 145 and 147 are modeled a capacitor integrators 161 and 163. Robinsons states in column 9 lines 16 through 22, that the inductor and capacitor integrators are easily implemented using transconductance integrators 170 180 190 200. The magnitudes of the integrator gain constants of integrators 170, 180, 190, and 200 are then set equal to the magnitudes of the capacitance or inductance of the passive elements 141, 145, 143, and 147, respectively.

With regards to claims 9 and 16, figure 3b(2) discloses a plurality inductor simulation components 153 and 155, each having an input and an output, the input of

the inductor simulation components being coupled to the circuit input (the source on the V_{in} signal), a plurality of capacitor simulation components 161 and 163, each having an input and an output, a coupling (summer 157) from an output of inductor simulation component 153 to the input of capacitor simulation component 161, a coupling (summer 151) from an output of capacitor simulation component 161 to the input of inductor simulation component 155, and a circuit output (load) coupled to the output capacitor simulation component 163. The method steps to the above-disclosed circuit are inherent.

Robinson discloses in FIG. 4a(1), an input voltage signal V_{in} on signal path 320 is applied to the positive terminal of the differential input stage of amplifier 321. The feedback signal on signal path 325 is applied to the negative terminal of the differential input stage. The desired output signal of the filter is taken from the output stage of the amplifier, which is connected to signal path 323. This signal is fed back to the negative terminal of the differential input stage of the amplifier by way of the low pass filter 324 in the feedback loop, which comprises the passive, low pass filter network. Therefore, a feedback circuit is coupled the circuit output to provide a reference signal level V_{in} for the feedback.

ⁿ
Robinson shows that the transconductance integrator can be used to provide the equivalent function of an inductor and capacitor. Therefore, because these components (the transconductance integrator, the inductor and capacitors) were art recognized equivalents at the time of the invention was made, one of ordinary skill in the

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art would have substituted the transconductance integrator of Robinson for the inductors and capacitors of McEwan et al.

It would have been obvious to have the plurality of inductors and capacitors comprising at least twenty inductive and capacitive components, since such modification would have involved a mere change in size of the line. A change in size is recognized to be within the level of ordinary skill in the art.

Allowable Subject Matter

Claims 2-5, 7, 10, 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Pennock US Patent 4,823,092, Castello et al US Patent 5,332,937, Brenden US Patent 6,784,698, Horikawa et al US Patent 6,504,436, Bach et al US Patent 6,580,326, Yamamoto US Patent 6,335,655, Oliaei et al US Patent 6,697,001, Henrion US Patent 6,680,243, Balteanu et al US Patent 6,704,560, Tan et al US Patent 4,855,696, Venkatraman et al US Patent 6,069,522 and Seevinck JP404230588A.

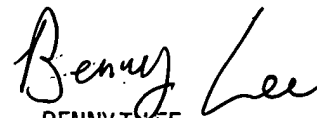
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

keg

Kimberly E Glenn
Examiner
Art Unit 2817


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817